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EXAMINER

HO, THOMAS M

ART UNIT PAPER NUMBER

2134

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/620,462

Applicant(s)

SHIM, JAE-SEONG

Examiner

Thomas M Ho

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/6/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16, 23-33, 41-43, 45 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 23-33, 41-43, 45 and 47-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-16, 23-33, 41-43, 45, 47-49 are pending.
2. The amendments of 12/06/04 have been received and entered.

### *Response to Arguments*

3. Applicants arguments have been considered but they are not persuasive.

Applicant has argued the following on pages 9-10:

*However, at column 8, lines 45-47 Matsui discloses a formula*

*$(S_{max}/M_{loop}) + 1/Dw \times Dw < Cycle$*

*for obtaining a scrambling signal, wherein  $S_{max}$  denotes the number of sectors included in the innermost circumferential track,  $M_{loop}$  denotes the number of times that one scrambling signal is repeated continuously,  $Dw$  denotes an offset width between the initial value of an  $M$  period sequence and that of a next  $M$  period sequence and  $Cycle$  denotes the maximum number of sectors expressed by the cyclic period of an  $M$  period sequence (column 4, lines 25-36).*

*That is, Matsui discloses a formula for scrambling a signal by dividing the number of sectors included in the innermost circumferential track by the number of times that one scrambling signal is repeated continuously and then adding that result by multiplying an offset width between the initial value of an  $M$  period sequence and that of*

Art Unit: 2134

*a next M period sequence, wherein this result is less than the maximum number of sectors expressed by the cyclic period of an M period sequence.*

*Accordingly, Matsui fails to teach or suggest "multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame," as recited in independent claim 1.*

The Examiner contends that Matsui does indeed disclose "multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame". Matsui explicitly discloses that Smax, denotes the number of sectors included in the outermost track. (Column 4, lines 25-30). Applicant has cited the same passage in arguments, however is it clearly stated that Smax denotes the sectors in the outermost track, and not the inner most as applicant appears to be asserting.

Furthermore, Matsui (Column 8, lines 26-40) clearly states that the last two outermost tracks are to be considered and interpreted for use in the equations. "In practice, the outermost circumference track and the adjacent track must be considered."

Applicants additional arguments seem to be grounded in the same objection.

Applicants arguments are not persuasive, and the rejection is maintained.

Art Unit: 2134

4. The Examiner shall make known to the record the following: the particular phrase “and/or” recited in independent claims 41, 43, 45, while normally rendering a claim vague and indefinite under 35 USC § 112, is acceptable with reference to the way it is used in the claims and with regard to the background of the art. It is well known to the general public that high density optical recording apparatuses, such as DVD burners, are also well known as DVD copiers. For this reason, the phrase “high density optical recording and/or reproducing apparatus”, will not be objected to.

***37 CFR 1.105 INFORMATION REQUEST***

5. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of the new claims 47-49.

- Information regarding current scrambling systems in high density optical recording apparatuses---in particular standards, such as the ECMA documents which disclose the industry specifications and norms for how DVD scramblers function.
- Information regarding high density optical disks formatted such that sectors are 2KBs in size, and the ECC blocks are 64 KBs in size. In the new claims 47-49, applicant has recited, presumably, an optical disk formatted as such. It is evident from the specification and the new claims that applicant does not consider such a formatted DVD/CD to be a part of his or her invention. The applicant refers to such a format as a mere

Art Unit: 2134

variant on a high density optical disk format, suggesting that Applicant has knowledge that these formatted optical disks are well known and present in the art.

In further response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention. For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16, 23-33, 41-43, 45, 47-49 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the structural elements and relationships for a data scrambler and the optical apparatus.

While random data generation and scrambling are similar, they are not identical.

Art Unit: 2134

The applicant has claimed a data scrambler in claim 1, however the claimed limitations only recite a random data generator, and fail to recite any scrambling mechanism.

Therefore upon further examination, the Examiner has determined that essential structural elements are missing, and the scrambler as claimed in claim 1 is incapable of actually scrambling data and only has random data generation capabilities.

Claims 41, 43, 45, while reciting a scrambling circuit, still fail to recite essential elements necessary for a data scrambler in a high density optical recording and/or reproducing apparatus. Claims 41, 43, 45 all recite "a scrambling circuit to scramble the random data". However, the essential structural elements to relate the scrambling circuit to the actual DVD device are missing.

The phrase "data scrambler for a high density optical recording and/or reproducing apparatus" is understood by those skilled in the art to refer to a data scrambler used to scramble data on an optical disk. It is evident from Applicant's specification, and from general knowledge in the art that the purpose of the data scrambler is ultimately used in some manner to scramble data on or for an optical disk.

A data scrambler for an optical disk apparatus must actually scramble the data for the optical disk.

Applicant however has only recited "a scrambling circuit to scramble the random data".

The data on or for the optical disk is never altered in any way. In view of the fact that

Art Unit: 2134

applicant recites the limitation: “data scrambler for a high density optical recording and/or reproducing apparatus”, and in view of the understanding from the background art and specification that the purpose of a data scrambler is to scramble the information on an optical disk, the Examiner holds that essential structural elements critical to the invention are missing in the claims.

Claim 47 is rejected for the same reasons as claim 1.

Claim 47 is still further rejected on the basis that it omits the essential structural relationships needed for a “sector” or an “ECC block”. From the specification, it is evident that Applicant recites “Sector” and “ECC block” to mean the sectors and ECC blocks of an optical disk apparatus, and in particular a high density optical disk apparatus.

However Applicant has worded claim 47 to recite:

*A data scrambler comprising:*

*A random data generator for generating random data in the cycle of 32KB in order to scramble data having structure of 2kb for a sector or a data frame and 64KB for an ECC block.*

No structural relationships relating the sector or ECC block to an optical disk format is given, yet the claim appears to recite a limitation that is specific only to optical disks.



Art Unit: 2134

In the absence of an optical disk recitation or structural relationship, any 2kb of information may be considered a sector. Any 64 KB of information may be construed as an ECC block, provided some of its usage is for error correction. The Examiner finds a lack of support for this type of random data generator in the specification for an interpretation reciting a random data generator for use outside the boundaries of an optical disk system.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 41-43, 45 are rejected as being anticipated by Matsui, US patent 5,661,707.

In reference to claim 1:

Matsui (Column 8, lines 45-47) discloses a data scrambler for a high density optical recording/reproducing apparatus, the data scrambler comprising:  
a random data generator which generates random data having a random data generation cycle based on a result obtained by multiplying at least a size of a first data frame by a

Art Unit: 2134

result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame,

where the random data generator is understood to be apart of the scrambling unit, and the cycle of the scrambling unit is based on the size of the sector(Column 8, lines 55-60, Bsect), or the first data frame, multiplied with the number of sectors in the two outermost tracks ( $S_{max} + 1$ ), divided by a second data frame Mloop.

In reference to claim 2:

Matsui(Column 8, lines 45-47) and Matsui(Column 8, lines 19-21) discloses the data scrambler of claim 1, wherein the size of the first data frame is one sector, and the size of the second data frame is one error correction block, where the first data frame is the size of one sector, and the size of the second data frame is Mloop, which is the number of times a signal can be repeated continuously, correlating to the block scrambling method in which block size is determined by the size of the error control block.

Applicant cites this on page 2:

“The cycle of random data generation of the random data generator in Fig. 2 is 32K and matches the 32K size of 1 error correction code block (ECC) block of a DVD.

In reference to claim 3:

Matsui(Column 8, lines 45-67) discloses the data scrambler of claim 1, wherein the random data generation cycle is at

Art Unit: 2134

least as great as the result obtained by multiplying at least the size of the first data frame by the result obtained by dividing the data amount of the two tracks in the outermost circumference of the optical disc by the size of the second data frame as such:

$$\text{Cycle} = (2^x - 1)/8 * \text{Bsect}$$

And the cycle is at least as great as or (greater than) as shown here

$$(\text{Smax}/\text{Mloop}) + 1/\text{Dw} * \text{Dw} < \text{Cycle}.$$

By substituting the first computation of cycle into the inequality, we get

$$(\text{Smax}/\text{Mloop}) + 1/\text{Dw} * \text{Dw} < (2^x - 1)/(8 * \text{Bsect})$$

multiplying both sides by Bsect, we get

$$(\text{Bsect})(\text{Smax}/\text{Mloop}) + 1/\text{Dw} * \text{Dw} < (2^x - 1)/8$$

The formula disclosed by

Cycle =  $(2^x - 1)/8 * \text{Bsect}$  Matsui(Column 6, lines 65-67) is the cycle in units of sectors. Since Bsect is the number of information signal bytes contained in one sector, by removing this value from the computation of the cycle, you are now expressing the cycle, not in units of sector, but in length of data.

This formula, which we compute from Matsui,

$(\text{Bsect})(\text{Smax}/\text{Mloop}) + 1/\text{Dw} * \text{Dw} < (2^x - 1)/8$ , thereby expresses the following the random generation cycle is at least as great as ( $<$ ,  $<=$ ), the result obtained by multiplying Bsect, the size of the first data frame where the first data frame is the size of a sector, obtained by dividing the data amount of the two tracks in the outermost circumference which = Smax, by the size of an error correction block, which is the second frame, Mloop.

Art Unit: 2134

Claims 41, 43 are rejected for the same reasons as claim 1.

Claims 42 are rejected for the same reasons as claim 2.

Claim 45 is rejected for the same reasons as claims 2 and 1.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4-16, 20-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui and the ECMA-267 standard for 120mm DVD ROMs..

In reference to claim 4:

Matsui does not explicitly disclose the data scrambler of claim 1, wherein the random data generator comprises:

- registers, serially arranged, which shift-store n bits and generate random data, and uses a total of n values as initial values, including a first initial value, first register values, which are output after shifting the first initial value 7 times, a second initial value immediately after a capacity required for return of the first initial

Art Unit: 2134

value and the first register values, and second register values which are output after shifting the second initial value 7 times; and

- a first serial logic circuit having a plurality of logic gates, which exclusive-OR outputs ones of the registers which correspond to a number of effective branches with a predetermined branch value, and outputs of neighboring ones of the logic gates are fed back to a least significant one of the registers, wherein the data scrambler further comprises a second logic circuit which scrambles outputs of a predetermined number of least significant ones of the registers and input data in units of byte.

Applicant discloses in Fig. 2., a prior art random data generator for use in a scrambling unit.

Fig. 2 Prior art discloses registers, serially arranged, which shift store n bits and generate random data, using a total of n values as initial values, where the initial values may be seeds to the RNG, or the actual data which is to be scrambled. The registers are also expected to store initial register values, usually initialized to expected values by the scrambling mechanism. This is disclosed in paragraph 3 of the background of the invention. And additional example is disclosed in ECMA-267, Section 17.

The examiner takes official notice that having a serial logic circuit having a plurality of logic gates, which exclusive-or outputs one of the registers corresponding to a number of effective branches with a predetermined branch value, and outputting the neighboring

Art Unit: 2134

ones of the logic gates which are fed back to a least significant one of the registers, wherein the data scrambler further comprises a second logic circuit which scrambles and outputs a predetermined number of least significant ones of the registers and input data in units of byte was well known in the art at the time of invention.

This is disclosed in Fig.2, as prior art by the applicant, and furthermore disclosed by Section 17 of ECMA 267.

It would have been obvious to one of ordinary skill in the art at the time of invention to have a random data generator comprise registers, serially arranged, shift-storing  $n$  bits, and scrambling the outputs of a predetermined number of least significant ones of the registers, wherein the data scrambler further comprises a second logic circuit which scrambles outputs of a predetermined number of least significant ones of the registers and input data in units of byte, given that it is disclosed in ECMA-267, the 120mm DVD ROM standard and is therefore the expected method in which a DVD-ROM scrambler should work –that is, creating a single scramble byte and repeating it 2047 times ( $2^k-1$ ), and XORing it with the data given in units of bytes. (2 kilobytes in the case of ECMA-267)

In reference to claim 5:

Matsui in view of the rejection of claim 4 discloses all of claim 5 except

The data scrambler wherein the random data generation cycle is  $2^{16} = 64K$  when  $n$  is

16.

Art Unit: 2134

It is known in the art that the standard random data generation cycle is typically 32K.

Applicant additionally discloses this in the background of the invention page 3, paragraph 4.

High density DVD's contain twice as much data per side. (ECMA-267 type C , Section 6)

The purpose of having the random data generation cycle at all is scramble the data so that adjacent tracks do not repeating values. This in turn allows for better tracking control.

Because a standard single sided regular density DVD requires 32K for a random data generation cycle in scrambling, it would have been obvious to one of ordinary skill in the art at the time of invention to require a scrambler of a High density DVD with twice as much data, to require a random data general cycle to be twice as long, or 32K as opposed to 64K.

In reference to claim 6:

While Matsui does not explicitly disclose an set of initial values for set of registers or scrambling device to be initialized with, it is known in the art that effective branch or first register values must be preset to some hexadecimal value. ECMA 267 Section 17, for example discloses in table 3, a set of values for initialization.

It would have been obvious to one of ordinary skill in the art at the time of invention to disclose any set of hexadecimal initialization values given that the branch values and first register values would have to be preset to something.

Claims 7, 10, 11, 14 are rejected for the same reasons as claim 6.

Art Unit: 2134

In reference to claim 8:

Matsui and ECMA-267 fails to explicitly disclose a data scrambler in which

A first initial value and register values are supplied 4K times left-shifting of the first initial value.

However in the case of a HD DVD, which contains twice as much data as a DVD (ECMA-267 type C , Section 6), it would expected that each sector would contain 4K bytes instead of 2K bytes.

The reason why the initial values and register values were shifted 2K times in the (ECMA-267 Section 17) scrambling system is because for each sector of data, a scrambling block of corresponding size must be produced. While the 8bit shift is repeated 2047 times(2k) times for a standard DVD, it would logically be repeated 4k times for a High density DVD, to provide an adequate size scrambling block to scramble a single sector.

It would have been obvious to one of ordinary skill in the art at the time of invention to have the n values as initial values, including a first initial value and register values supplied in each 4K times left-shifting of the first initial value, in a High density DVD, in order to scramble each sector.

Claim 9 is rejected for the same reasons as claim 5.



Art Unit: 2134

In reference to claim 12:

Matsui fails to explicitly disclose the data scrambler of claim 1, wherein the random data generator changes the effective branch value in units of a first cycle and generates a second cycle of the random data according to a control value.

(Section 17 and Section 18 of ECMA-267) discloses a random data generator changing the effective branch value in units of a first cycle, where the first cycle is an ECC block, and the branch value is changed when the 16 values of the shift registers need to be “reseeded”.

A second cycle of the random data is generated according to the control values, the initial seed values, as depicted in Table 3.

It would have obvious to one of ordinary skill in the art at the time of invention to devise a data scrambler, wherein the random data generator changes the effective branch value in units of a first cycle and generates a second cycle of the random data according to a control value, because it is disclosed by the ECMA-267, the 120mm DVD ROM standard and is therefore the method in which a DVD-ROM scrambler would be expected to should work.

In reference to claim 13:

(Section 17 and Section 18 of ECMA-267) discloses a data scrambler where the first cycle corresponds to an ECC block, and the second cycle corresponds to a sector, where the first cycle branch is changed when the initial pre-set values need to be reseeded, and the second cycle corresponds to the one sector of data (for  $k = 0$  to 2047)

Art Unit: 2134

Claim 13 is rejected for the same reasons as claim 12.

In reference to claim 15:

Claim 15 is rejected for the same grounds as claim 4, the embodiment of claim 4 only lacking a decoder which supplies 12 output bits.

It would have been obvious to one of ordinary skill in the art to use a twelve bit decoder, rather than a 15 or 16 bit decoder as a matter of design choice.

In reference to claim 16:

Matsui fails to disclose a data scrambler where initial values of the registers are newly set in each error correction block.

(ECMA-267 Section 17) discloses a data scrambler where initial values of the registers are newly set in each error correction block, where each initial value is set as byte 0 of the 2047 bytes that will be scrambled and set into the ECC block.

It would have been obvious to one of ordinary skill in the art to have the initial values of the registers set in each error correction block, since it is the same method as disclosed in ECMA-267, the 120 mm DVD-ROM standard, and consequently would be expected by all members of DVD consortium that adhere to the standard.

In reference to claim 23:

Although Matsui does not explicitly set sizes for the first data frame, the second data frame, or even the amount of data in the two tracks of the outermost circumference, it would have been obvious to one of ordinary skill in the art, that an optical disk, and the

Art Unit: 2134

size of a first data frame(the sector), and the size of the second data frame(the error correction block), may be set to any given value, provided that a manufacturer desired to support optical discs with those specific preset frame sizes.

Claims 24 and 25 are rejected for the same reasons as claim 23.

Claim 26 is rejected for the same reasons as claim 5.

In reference to claim 27:

Matsui discloses all of claim 27 except a data scrambler wherein:

(ECMA 267 Section 17) discloses a data scrambler wherein the initial values are determined by an upper 4 bits of a last byte in a 4 byte identification code which is allocated in each of a plurality of the first data frames.

“The initial preset values of the shift register is equal to the value represented by bits b7 to b4 of the ID field of the data frame” The 4-byte ID field is disclosed in Figure 16 of Section 16 of ECMA-267

It would have been obvious to one of ordinary skill in the art at the time of invention to determine the initial values for the data scrambler as disclosed by applicant, since it is the same method as disclosed in ECMA-267, the 120 mm DVD-ROM standard, and consequently would be expected by all members of DVD consortium that adhere to the standard.

Claims 28, 29 are rejected for the same reasons as claim 27.

Art Unit: 2134

Claim 33 is rejected for the same reasons as claim 8.

***Conclusion***

11. The following art not relied upon is made of record:

- US patent 6125100 discloses an optical disk apparatus for improved error correction capability based on a 64K encoding block.

12. In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained may be accepted as a complete reply to the requirement for that item.

This Office action has an attached requirement for information under 37 CFR 1.105. A complete reply to this Office action must include a complete reply to the attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

Art Unit: 2134

13. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

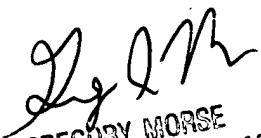
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of the final action and the advisory action is not mailed under after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension pursuant to 37 CFR 1.136(A) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M Ho whose telephone number is (703)305-8029. The examiner can normally be reached on M-F from 8:30am – 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A. Morse can be reached at (703)308-4789. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5484.

TMH

  
GREGORY MORSE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Art Unit: 2134

March 4<sup>th</sup> 2005